

CHAPTER 11
SOILS, GEOLOGY, AND SEISMICITY

11.0 SOILS, GEOLOGY, AND SEISMICITY

11.1 ENVIRONMENTAL SETTING

This section describes the environmental setting of the Home Depot project site from a geologic, soils, and seismic standpoint, based on available information and a site reconnaissance.

11.1.1 Geologic Setting

The Home Depot project site is located in the western foothills of the Sierra Nevada at an elevation of about 1,400 feet in a complex geologic environment. The western slope of the Sierra Nevada is underlain by a series of metamorphic rock assemblages that trend north-northwest to south-southeast between the Mesozoic granitics of the Sierra Nevada batholith on the east and the sediment-filled Sacramento Valley to the west. These metamorphic rocks were developed by convergent plate tectonics in the early Paleozoic to Late Jurassic (400 to 120 million years ago) and consist of three northerly trending units bounded by faults and classified on the basis of age and lithology: the Eastern, Central, and Western metamorphic terranes (Loyd, 1995).

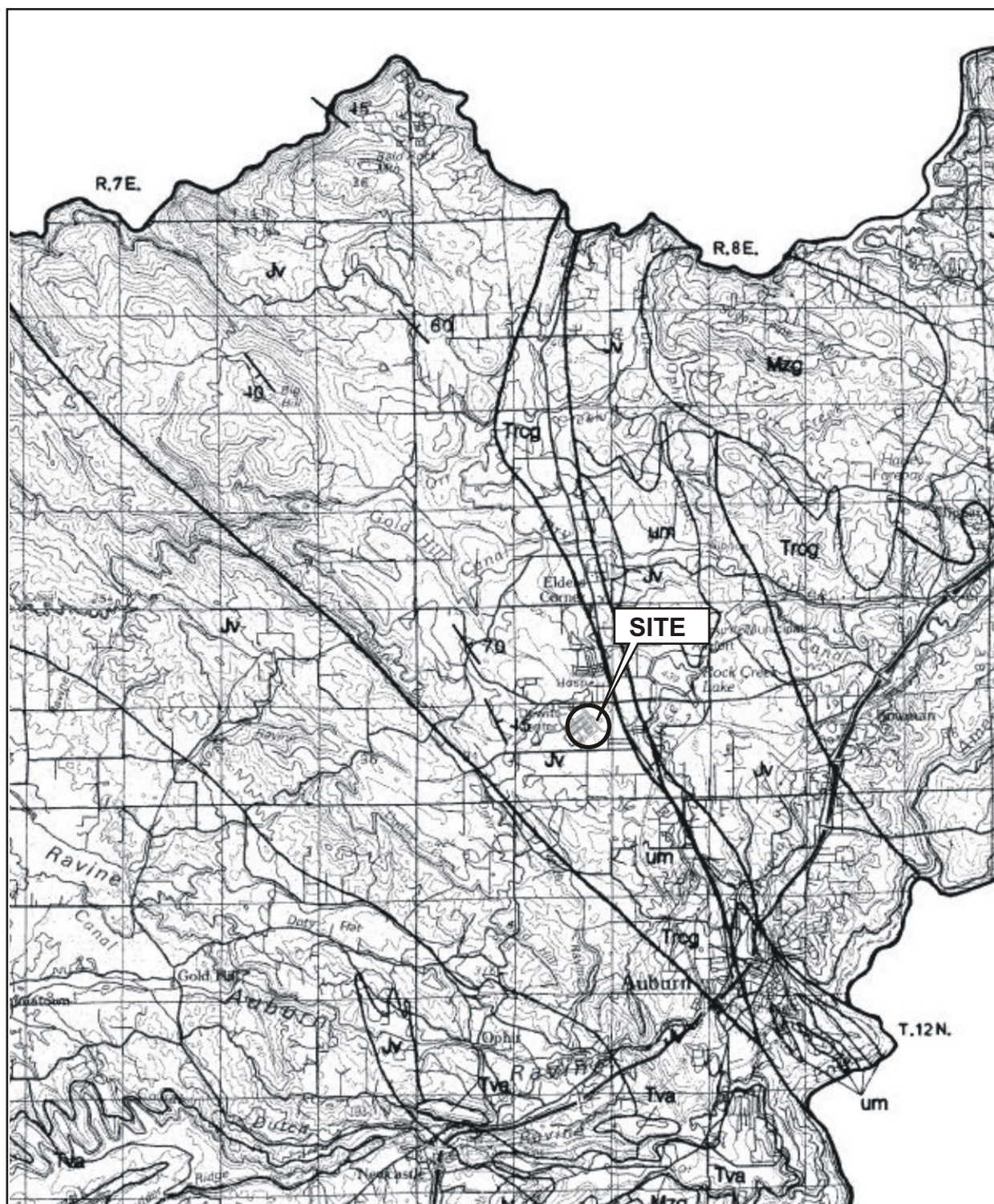
The project site is located in the eastern portion of the Western Metamorphic Terrane, which consists predominantly of Jurassic igneous and sedimentary rocks of island-arc origin. The site is underlain by rocks known as the Smartville Complex, composed of mafic/intermediate volcanic and plutonic rocks formed along an island-arc chain, whose outcrops west of SR 49 are controlled by northwest-trending gently dipping folds that plunge to the southeast (Springer, 1981). Figures 11-1a and 11-1b are a geologic map of the region surrounding the site. Figures 11-1a and 11-1b indicate that bedding in the vicinity of the site trends northwest to southeast and dips from 15° to 70° toward the northeast.

11.1.2 Faulting

The Home Depot project site is situated near the western margin of the Foothills Fault System, which is bounded by the Melones Fault Zone about 15 miles to the east and the Bear Mountain Fault Zone, the closest portion of which is within about ½ mile to the east. The Foothills Fault System had been considered to have a low level of activity until the occurrence of the 1975 magnitude (M) 5.7 Oroville earthquake, located on the Cleveland Hill Fault, in the northern reaches of the system. Significant investigations have occurred along the trend of the Foothills Fault System since 1975. The three segments of the Bear Mountain Fault Zone identified on the Fault Activity Map of California and Adjacent Areas closest to the project site, the Highway 49 Lineament, about 8 miles to the north, the Maidu East Lineament 4 miles to the southeast, and the Rescue Lineament 11 miles to the southeast, are classified by the California Division of Mines and Geology (CDMG) as having last moved in the Late Quaternary (the last 700,000 years) (Jennings, 1994).

Extensive geoseismic studies were conducted by consultants to the U.S. Bureau of Reclamation associated with the proposed Auburn Dam as a result of the 1975 Oroville earthquake (Schwartz et al., 1977). One of the geologic structures evaluated was the DeWitt lineament, or fault zone, which had been identified by geologic mapping and air photo interpretation. The DeWitt Fault Zone trends in a northwest-to-southeast direction from the Bear River through Auburn (Bryant, 1983). Woodward-Clyde Consultants excavated and logged three exploratory trenches across this feature as follows:

- Hubbard Road site – located southeast of Big Hill near Dry Creek, about 2 miles northwest of the project site;
- Bean Road site – about 5 miles due south of the site; and
- St. Joseph site – about 0.5 mile southeast of the site (Woodward Clyde Consultants, 1977).



Scale: 1:100,000



Note:
The explanation of geologic codes
is provided on Figure 11-1B.

REGIONAL GEOLOGY

Reference:
Mineral Land Classification of Placer County; DMG Open File Report 95-10
R. Lloyd, 1995

May 2005
28066497

Environmental Impact Report
Home Depot - DeWitt Center
Auburn, California





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FIGURE 11-1a

EXPLANATION

Tva	Undifferentiated Tertiary andesitic mudflows, volcanic breccias, pyroclastic deposits, lava flows, and sedimentary fluvial deposits composed almost entirely of andesitic material. These deposits are traditionally mapped as Mehrten Formation in Sierra Nevada foothill region.
Mzg	Mesozoic intrusive rock of the Sierra Nevada batholith and related plutons ranging in composition from diorite to granite.
um	Mesozoic and Paleozoic serpentinized ultramafic rock.
Jv	Volcanic rocks composed mainly of mafic to intermediate volcanic flows, flow breccias, tuff breccias, along with volcanoclastic and volcanic-derived sediments and small gabbroic intrusions. Includes rocks of the Smartville and Lake Combie volcanic complexes.
Trcg	Clipper Gap Formation: Highly disrupted assemblage of thin to massive beds of chert and argillite with small, isolated lenses of limestone (Trls). Locally tectonically intermixed within a slate matrix (sedimentary melange).

SYMBOLS

	Geologic Contact
	Fault
	Strike & Dip of Bed
	Strike & Dip of Foliation

REGIONAL GEOLOGY (LEGEND)

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FIGURE 11-1b

The results of the trenching studies indicated that the DeWitt Fault Zone is a significant zone of deformation generated during episodes of compressional tectonism in the Mesozoic, with evidence of late Quaternary displacement at one location (the Hubbard Road site).

The CDMG investigated the DeWitt segment of the Bear Mountain Fault Zone north of Auburn as part of the 10-year fault evaluation program (Bryant, 1983; Hart, 1980). This study, which relied heavily on consultants' investigations (Woodward Clyde Consultants, 1977) indicated that crustal monitoring shows that deformation along the Bear Mountain Fault Zone is occurring near Auburn. However, this strain is distributed along several Mesozoic-age shear zones over a several-mile-wide zone. Faulting that took place during the Holocene (the last 11,000 years) could not be ruled out along the DeWitt Fault Zone, but the zone is not well defined and displacement rates are probably too small to produce significant surface rupture (Bryant, 1983). Accordingly, the DeWitt Fault Zone has not been designated as a special study zone under the provisions of the Alquist-Priolo Act.

11.1.3 Seismicity

The foothills of the Sierra Nevada are characterized by extremely low seismicity. Data compiled between 1808 and 1987 show that only 15 earthquakes between magnitude (M) 3.0 and M 4.0 (on the Richter scale) were recorded along the Foothills Fault System between Mariposa and Oroville (Goter, 1988).

Four notable historical earthquakes have been reported in the northern Sierra Nevada. Three seem to have been associated with the northern portion of the Melones Fault Zone near Downieville (December 1, 1867, Modified Mercalli (MM) Intensity of V; April 28, 1888, MM VI; and June 22, 1909, MM VI) (Dames & Moore, 1992). The fourth was the M 5.7 Oroville earthquake of August 14, 1975, located about 40 miles north of the Home Depot project site.

An evaluation of historic and potential future seismicity was provided for the Home Depot site by Kleinfelder (1996). This document discusses active and potentially active faults within the region that could be sources of future earthquakes which could be felt at the site. Table 11-1 (after Kleinfelder, 1996) lists regional faults of relevance to the site, and potential peak site accelerations due to hypothetical earthquakes.

Table 11-1
Regional Faults and Estimated Peak Ground Accelerations

Fault Name	Approx. Distance (miles)	Upper-Bound⁽¹⁾ Magnitude	Peak Site Acceleration (g)⁽²⁾
Bear Mountain	0.23	6½	0.40
Melones	15	6½	0.17
Dunnigan Hills (also known as Zamora)	43	6½	0.07
Coast Range – Sierran Block Boundary (CRSB)	56	7	0.07

Source: Kleinfelder, 1996

Notes:

- ⁽¹⁾ The upper-bound event is the maximum earthquake considered capable of occurring under the currently known tectonic framework.
- ⁽²⁾ Estimated potential mean peak horizontal ground acceleration that may occur at the site for each fault based on the Joyner and Boore attenuation relationship (Joyner and Boore, 1994, Site Class B, as cited in Kleinfelder, 1996).

This table shows that the controlling event for this site would be an upper-bound 6½ magnitude earthquake occurring on the Bear Mountain Fault located at a distance of about 0.23 mile. These results are consistent with the recent peak ground acceleration map titled “Peak Acceleration from Maximum Credible Earthquakes in California,” prepared by the California Department of Conservation, Division of Mines and Geology (Mualchin and Jones, 1992), which locates the project site between a peak horizontal acceleration of 0.30 g and 0.40 g.

A design earthquake ground acceleration (10 percent probability of occurrence in 50 years) of 12 percent was calculated probabilistically for this site (Twining, 2002). The Design Basis Earthquake (DBE), developed probabilistically, has been incorporated into the Uniform Building Code (UBC), and is the standard for structures.

11.1.4 Soil Types

The entire project site is underlain by soil identified as Auburn silt loam, 2 to 15 percent slopes (USDA, SCS, 1980). The soil is a shallow, undulating to rolling, well-drained material underlain by vertically tilted metamorphic rock and formed as a residual deposit due to the weathering of the parent rock.

Three geotechnical studies of the project site have been conducted for the Home Depot, as follows:

- Preliminary Geotechnical Engineering Report (Kleinfelder, 1996) – This study consisted of 11 test pits ranging from 1.5 to 7.75 feet deep and a limited laboratory testing program as well as a seismic refraction survey in the southwestern portion of the site where the deepest excavation will occur;
- Geotechnical Engineering Investigation (Twining Laboratories, 2002) – This investigation consisted of 40 test borings ranging from 3 to 25.5 feet deep as well as a laboratory testing program to evaluate the engineering properties of representative site soils. The report represents the project’s current geotechnical report, which incorporates the Kleinfelder report above (1996) by reference; and
- Supplemental Report, Rippability Investigation (Twining Laboratories, 2003) – This study included a seismic refraction survey consisting of six seismic refraction lines of 130 feet each, in the southwestern portion of the site.

From a geotechnical engineering standpoint, the site stratigraphy can be described as stiff to hard sandy silts typically 1 to 5 feet thick overlying completely weathered meta-volcanic rock with some areas of slightly to highly weathered rock. A thin layer of fill was encountered locally; it is 1 to 3.5 feet thick in the northeastern portion of the proposed building footprint and 1 to 2 feet thick in the proposed parking area. Drill rig refusal in the underlying rock ranged between depths of 2 and 22 feet, and averaged about 8.5 feet (Twining, 2002).

Laboratory testing indicates that the silty soils and weathered rock show low plasticity with a low expansion potential. Soil and rock should exhibit “moderate strength, moderate compressibility characteristics, and low swell potential upon inundation with water” (Twining, 2002).

11.1.5 Known Mineral Resources

Information on the mineral resource potential within the project area was obtained from the California Department of Conservation, Division of Mines and Geology, Mineral Land Classification of Placer County, Open-File Report 95-10 (Loyd, 1995). In accordance with California’s Surface Mining and

Reclamation Act of 1975, this document classifies the land in Placer County according to “the presence, absence, or likely occurrence of significant mineral deposits in areas of the county subject to either urban expansion or other irreversible land uses incompatible with mining.”

This report classifies the land in Placer County as Mineral Resource Zone I (MRZ-1), Mineral Resource Zone 2a (MRZ-2a), Mineral Resource Zone 3a (MRZ-3a), and Mineral Resource Zone 4 (MRZ-4). Mineral Resource Zones are defined as follows:

- MRZ-1 = Areas where available geologic information indicates there is little likelihood for the presence of significant mineral resources.
- MRZ-2a = Areas underlain by mineral deposits where geologic data indicate that significant measured or indicated resources are present.
- MRZ-2b = Areas underlain by mineral deposits where geologic information indicate that significant inferred resources are present.
- MRZ-3a = Areas containing known mineral occurrences of undetermined mineral resource significance.
- MRZ-3b = Areas containing inferred mineral resources of undetermined mineral resource significance.
- MRZ-4 = Areas of no known mineral occurrences where geologic information does not rule out either the presence or absence of significant mineral resources.

Open-File Report (OFR) 95-10 indicates the following classifications for the project site:

- MRZ-1 for deposits formed by mechanical concentration (placer gold).
- MRZ-3a for deposits formed by hydrothermal processes (precious and base metals); the area is part of Zone h-9, the Western County Region, for occurrences of copper, zinc, and lode gold.
- MRZ-4 for deposits formed by magmatic segregation processes (chromite).

Six mines or prospects, five gold and one copper, are or were located within about 2 miles of the project site. One of these mines or prospects is plotted on the adjacent DeWitt Center property, but the accuracy of the mapping is questionable. OFR 95-10 identifies the mine/prospect as the Black Ledge, located in T13N, R8E, Section 32. However, review of the primary reference cited is confusing. The Black Ledge is not discussed; rather, reference is made to a “Black Lead, a former producer,” which lies nearby to the south of the Two Orphans prospect in N13N, R8E, Section 30. No details are provided regarding specific location, vein orientation, or production history. No surface evidence has been found concerning this gold mine or prospect. However, it is unlikely that the site area represents a source of known mineral reserves.

11.2 REGULATORY SETTING

This section describes regulations relevant to soils, geology, and seismicity relevant to the proposed project.

11.2.1 Federal

No federal regulations apply to soils, geologic, or seismologic aspects of the proposed project.

11.2.2 State

The only state regulation applicable to the project from a soils, geologic, or seismologic standpoint is the Alquist-Priolo Earthquake Fault Zone Act (California Public Resources Code, Division 2, Chapter 7.5, Sections 2621-2630), which relates to the siting of structures for human occupancy in the vicinity of faults considered active by the California Geological Survey (formerly the California Division of Mines and Geology).

11.2.3 Local

Local regulations relevant to soils, geological, and seismological issues are the *Placer County General Plan*, the Placer County Grading Ordinance, and the *Auburn/Bowman Community Plan*. The *Placer County General Plan* emphasizes grading and erosion control issues as well as the effects of expansive soils, whereas the *Auburn/Bowman Community Plan* includes consideration of geological hazards and mineral resources in addition to grading and erosion control. The Placer County Grading Ordinance specifies permit requirements, geotechnical and geologic reports, and establishes design standards for earthwork (cuts and fills) as well as drainage and erosion/ sediment control. The specific applicable plans and their goals and policies for soils, geology, and seismicity are identified in Appendix C.

11.3 IMPACTS

Impacts can be related to the construction and operation of the project on the natural environment, but can also be considered as the environment's effect on the project; for example, unusual grading requirements due to the nature of the underlying soil and bedrock.

This section identifies and discusses the environmental impacts resulting from the proposed project, and suggests one mitigation measure to reduce the levels of impact. A detailed discussion of the mitigation measure is included in Section 11.4.

Significance Criteria

A soils, geology, or seismicity impact would be considered significant if any of the following conditions would result from implementation of the proposed project:

- Substantial alteration of existing topographic features of the project site;
- Result in loss of availability of known mineral resources that would be of value to the region and the residents of the state;
- Potential constraints to development as a result of seismic hazards within the study area;
- Increased erosion during construction activities; or
- Potential constraints to development as a result of soils and geologic conditions in the area of the proposed project.

11.3.1 Construction Impacts

IMPACT NO. G-1:	Topographic alteration resulting from earth grading.
SIGNIFICANCE:	Potentially Significant
MITIGATION:	Mitigation Measures G-A (The Applicant shall comply with the requirements of Section II of the Land Development Manual [LDM] that are in effect at the time of submittal. The LDM requires the

Applicant to prepare and submit Improvement Plans, specifications and cost estimates to the DPW for review and approval. The plans shall show all conditions for the project as well as pertinent topographical features both on and off site. All existing and proposed utilities and easements, onsite and adjacent to the project, which may be affected by planned construction, shall be shown on the plans. All landscaping and irrigation facilities within the public right-of-way [or public easements], or landscaping within sight distance areas at intersections, shall be included in the Improvement Plans. The Applicant shall pay plan check and inspection fees. The cost of the above-noted landscape and irrigation facilities shall be included in the estimates used to determine these fees. It is the Applicant's responsibility to obtain all required agency signatures on the plans and to secure department approvals. If the Design/Site Review process and/or DRC review is required as a condition of approval for the project, said review process shall be completed prior to submittal of Improvement Plans. Record drawings shall be prepared and signed by a California Registered Civil Engineer at the Applicant's expense and shall be submitted to the DPW prior to acceptance by the County of site improvements);

G-B (The Applicant shall comply with provisions of the County Grading Ordinance [Ref. Article 15.48, formerly Chapter 29], Placer County Code that are in effect at the time of submittal. All proposed grading, drainage improvements, vegetation and tree removal shall be shown on the Improvement Plans in conformance with the Grading Ordinance. No grading, clearing, or tree disturbance shall occur until the Improvement Plans are approved and all temporary construction fencing has been installed and inspected by a member of the DRC. All cut/fill slopes shall be at 2:1 [horizontal:vertical] unless a soils report supports a steeper slope and DPW concurs with said recommendation.

The Applicant shall revegetate all disturbed areas. Revegetation undertaken from April 1 to October 1 shall include regular watering to ensure adequate growth. A winterization plan shall be provided with project Improvement Plans. It is the Applicant's responsibility to assure proper installation and maintenance of erosion control/winterization during project construction. Where soil stockpiling or borrow areas are to remain for more than one construction season, proper erosion control measures shall be applied as specified in the Improvement Plans/Grading Plans. Provide for erosion control where roadside drainage is off of the pavement, to the satisfaction of the DPW.

The Applicant shall submit to the DPW a letter of credit or cash deposit in the amount of 110% of an approved engineer's estimate for winterization and permanent erosion control work prior to Improvement Plan approval to guarantee protection against erosion and improper grading practices. Upon the County's acceptance of improvements, and satisfactory completion of a one-year

maintenance period, unused portions of said deposit shall be refunded to the project Applicant or authorized agent.

If, at any time during construction, a field review by County personnel indicates a significant deviation from the proposed grading shown on the Improvement Plans, specifically with regard to slope heights, slope ratios, erosion control, winterization, tree disturbance, and/or pad elevations and configurations, the plans shall be reviewed by the DRC/DPW for a determination of substantial conformance to the project approvals prior to any further work proceeding. Failure of the DRC/DPW to make a determination of substantial conformance may serve as grounds for the revocation/modification of the project approval by the appropriate hearing body); and

G-C (Submit to DPW, for review and approval, a geotechnical engineering report produced by a California Registered Civil Engineer or Geotechnical Engineer. The report shall address and make recommendations on the following:

- A) Road, pavement, and parking area design
- B) Structural foundations, including retaining wall design (if applicable)
- C) Grading practices
- D) Erosion/winterization
- E) Special problems discovered on site, (i.e., groundwater, expansive/unstable soils, etc.)
- F) Slope stability

Once approved by the DPW, two copies of the final report shall be provided to the DPW and one copy to the Building Department for their use. If the soils report indicates the presence of critically expansive or other soils problems which, if not corrected, could lead to structural defects, a certification of completion of the requirements of the soils report will be required prior to issuance of a Building Permit. It is the responsibility of the Applicant to provide for engineering inspection and certification that earthwork has been performed in conformity with recommendations contained in the report).

SIGNIFICANCE

AFTER MITIGATION: Less Than Significant

Grading to achieve the proposed project configuration would involve cuts of up to about 18 feet in the southwestern corner of the site and fills up to about 13 feet thick in the northeastern corner of the property, to be accomplished by a balanced earthwork program. Additional cuts and fills would be required to construct the proposed detention pond. Cuts and fills of this magnitude could constitute a substantial modification of existing site topography. Mitigation measures have been identified that require the Applicant to develop comprehensive Improvements Plans, specifications, and cost estimates as required by the County's Land Development Manual. Detailed instructions for preparation of these Improvement Plans are described in Mitigation Measures G-A and G-B. Mitigation Measure G-B also requires the Applicant to revegetate all disturbed areas and provide a winterization plan prior to the

County's approval of the Improvement Plans. Mitigation Measure G-C requires preparation of a geotechnical engineering report, and defines the items that must be addressed and the site issues for which recommendations must be made. The Applicant must provide engineering inspection and certification that the earthwork has been performed consistent with the recommendations in the geotechnical engineering report. Additionally, all earthwork activity would be conducted in accordance with the Placer County Grading Ordinance, as described in Section 3.8. With implementation of these mitigation measures, impacts resulting from topographic alteration would be less than significant.



IMPACT NO. G-2: Loss of availability of important mineral resources

SIGNIFICANCE: Less Than Significant

MITIGATION: None Warranted

As discussed in Section 11.1.5, it is unlikely that the site area represents a source of known mineral reserves, and no mineral resources of value are known to exist on the site. Therefore, loss of accessibility to mineral resources on the site as a result of project construction would be a less than significant impact.



IMPACT NO. G-3: Potential development constraints due to seismic hazards.

SIGNIFICANCE: Less Than Significant

MITIGATION: None Warranted

The Bear Mountain Fault Zone, about ½ mile east of the Home Depot site, defines the western margin of the Foothills Fault System which was the source of the 1975 Oroville earthquake. The closest segments of the Bear Mountain Fault zone, shown in the Fault Activity Map of California and Adjacent Areas are 4 to 11 miles away and are classified as having moved within the last 700,000 years. Another feature called the DeWitt Fault Zone passes through the DeWitt Center area. This structure has displacement rates too that are probably too small to produce significant surface rupture, and thus has not been designated as a special study zone by the California Geological Survey under the provisions of the Alquist-Priolo Act. The site development will be designated in accordance with the probabilistically calculated Design Basis Earthquake required by the Uniform Building Code. Consequently, site development constraints are not anticipated due to seismic hazards. Therefore, this impact would be less than significant.



IMPACT NO. G-4: Increased erosion during construction activities.

SIGNIFICANCE: Potentially Significant

MITIGATION: Mitigation Measures G-A (see Impact No. G-1); G-B (see Impact No. G-1); G-C (see Impact No. G-1); G-D (Stockpiling and/or vehicle staging areas shall be identified on the Improvement Plans and located as far as practical from existing dwellings and protected resources in the area); G-E (Prepare and submit with the project Improvement Plans, a drainage report in conformance with the requirements of Section 5 of the LDM and the Placer County Storm

Water Management Manual that are in effect at the time of submittal, to the DPW for review and approval. The report shall be prepared by a Registered Civil Engineer and shall, at a minimum, include: A written text addressing existing conditions, the effects of the improvements, all appropriate calculations, a watershed map, increases in downstream flows, proposed onsite and offsite improvements and drainage easements to accommodate flows from this project. The report shall demonstrate that post-project flows are less than pre-project flows. The report shall address storm drainage during construction and thereafter and shall propose "Best Management Practice" (BMP) measures to reduce erosion, water quality degradation, etc. Said BMP measures for this project shall include: Minimizing drainage concentration from impervious surfaces, construction management techniques, erosion protection at culvert outfall locations, erosion control mats, revegetation, silt fence, runoff control berms or diversion ditches, sedimentation basins, hay bales, mulching, oil/grit separators, oil and debris skimmers on storm drains, and regular sweeping of paved areas); and H-B (see Impact H-1).

SIGNIFICANCE

AFTER MITIGATION: Less Than Significant

Unless treated appropriately, erosion of site soils and sedimentation could be experienced during construction activities. Removal of existing vegetation, deep cuts, and extensive grading could all contribute to increased erosion at the site. The Applicant proposes to prepare a Grading and Erosion Control Plan, as identified in Section 3.8. This plan would show all planned grading, drainage improvements, and removal of vegetation and trees, as well as other project features related to the potential for erosion. Best Management Practices (BMPs) as required by the Placer County Grading Ordinance would be applied to areas that are susceptible to erosion, as described in Section 3.8. Guidance for BMPs are included in the California Stormwater BMP Handbook for New Development and Redevelopment (California Stormwater Quality Association, 2003a and 2003b). These Applicant-proposed environmental protection measures, along with mitigation measures identified in Impact G-1 and additional mitigation related to identification of staging areas (Mitigation Measure G-D) and preparation of a drainage report (Mitigation Measure G-E), would reduce impacts related to increased erosion during construction activities to a less than significant level.



IMPACT NO. G-5: Potential development constraints due to soils and/or geologic site conditions.

SIGNIFICANCE: Potentially Significant

MITIGATION: Mitigation Measure G-F (Prepare and implement a blasting plan. The Applicant will comply with applicable County Ordinances that relate to blasting and use only state licensed contractors to conduct these operations).

SIGNIFICANCE AFTER MITIGATION: Less Than Significant

Available subsurface exploration suggests that most of the excavation can be performed by digging with conventional equipment. However, the presence of hard rock in the southwestern corner of the site, where the excavation would be the deepest, indicates that pneumatic drilling or some limited blasting may be required to achieve the proposed grade (Twining, 2003). Blasting may also be necessary to construct the proposed detention pond. If blasting is employed during construction due to the presence of rock, vibrations and dust generation could result. With the implementation of a blasting plan as described in Mitigation Measure G-F, this impact would be reduced to a less than significant level.

11.3.2 Operational Impacts

No operational impacts were identified.

11.3.3 Consistency with County Plans and Policies

Appendix C discusses the consistency of the proposed project with applicable County plans and policies. The proposed project is consistent with all soils, geology, and seismicity CEQA-related related plans and policies identified in Appendix C.

11.4 MITIGATION MEASURES

The requirements for each mitigation measure identified below include all text related to the implementation of the mitigation measures in this subsection.

Mitigation Measure G-A: The Applicant shall comply with the requirements of Section II of the Land Development Manual [LDM] that are in effect at the time of submittal. The LDM requires the Applicant to prepare and submit Improvement Plans, specifications, and cost estimates to the DPW for review and approval. The plans shall show all conditions for the project as well as pertinent topographical features both on and off site. All existing and proposed utilities and easements, on site and adjacent to the project, which may be affected by planned construction, shall be shown on the plans. All landscaping and irrigation facilities within the public right-of-way (or public easements), or landscaping within sight distance areas at intersections, shall be included in the Improvement Plans. The Applicant shall pay plan check and inspection fees. The cost of the above-noted landscape and irrigation facilities shall be included in the estimates used to determine these fees. It is the Applicant's responsibility to obtain all required agency signatures on the plans and to secure department approvals. If the Design/Site Review process and/or DRC review is required as a condition of approval for the project, said review process shall be completed prior to submittal of Improvement Plans. Record drawings shall be prepared and signed by a California Registered Civil Engineer at the Applicant's expense and shall be submitted to the DPW prior to acceptance by the County of site improvements.

Mitigation Measure G-A applies to Impact Nos. G-1, G-4, HZ-1 and H-1.

Mitigation Measure G-B: The Applicant shall comply with provisions of the County Grading Ordinance (Ref. Article 15.48, formerly Chapter 29), Placer County Code that are in effect at the time of submittal. All proposed grading, drainage improvements, vegetation and tree removal shall be shown on the Improvement Plans in conformance with the Grading Ordinance. No grading, clearing, or tree disturbance shall occur until the Improvement Plans are approved and all temporary construction fencing has been installed and inspected by a member of the DRC. All cut/fill slopes shall be at 2:1 (horizontal:vertical) unless a soils report supports a steeper slope and DPW concurs with said recommendation.

The Applicant shall revegetate all disturbed areas. Revegetation undertaken from April 1 to October 1 shall include regular watering to ensure adequate growth. A winterization plan shall be provided with project Improvement Plans. It is the Applicant's responsibility to assure proper installation and maintenance of erosion control/winterization during project construction. Where soil stockpiling or borrow areas are to remain for more than one construction season, proper erosion control measures shall be applied as specified in the Improvement Plans/Grading Plans. Provide for erosion control where roadside drainage is off of the pavement, to the satisfaction of the DPW.

The Applicant shall submit to the DPW a letter of credit or cash deposit in the amount of 110% of an approved engineer's estimate for winterization and permanent erosion control work prior to Improvement Plan approval to guarantee protection against erosion and improper grading practices. Upon the County's acceptance of improvements, and satisfactory completion of a one-year maintenance period, unused portions of said deposit shall be refunded to the project Applicant or authorized agent.

If, at any time during construction, a field review by County personnel indicates a significant deviation from the proposed grading shown on the Improvement Plans, specifically with regard to slope heights, slope ratios, erosion control, winterization, tree disturbance, and/or pad elevations and configurations, the plans shall be reviewed by the DRC/DPW for a determination of substantial conformance to the project approvals prior to any further work proceeding. Failure of the DRC/DPW to make a determination of substantial conformance may serve as grounds for the revocation/modification of the project approval by the appropriate hearing body.

Mitigation Measure G-B applies to Impact Nos. G-1, G-4, HZ-1 and H-1.

Mitigation Measure G-C: Submit to DPW, for review and approval, a geotechnical engineering report produced by a California Registered Civil Engineer or Geotechnical Engineer. The report shall address and make recommendations on the following:

- A) Road, pavement, and parking area design
- B) Structural foundations, including retaining wall design (if applicable)
- C) Grading practices
- D) Erosion/winterization
- E) Special problems discovered on site, (i.e., groundwater, expansive/unstable soils, etc.)
- F) Slope stability

Once approved by the DPW, two copies of the final report shall be provided to the DPW and one copy to the Building Department for their use. If the soils report indicates the presence of critically expansive or other soils problems which, if not corrected, could lead to structural defects, a certification of completion of the requirements of the soils report will be required, prior to issuance of a Building Permit. It is the responsibility of the Applicant to provide for engineering inspection and certification that earthwork has been performed in conformity with recommendations contained in the report.

Mitigation Measure G-C applies to Impact Nos. G-1, G-4, and H-1.

Mitigation Measure G-D: Stockpiling and/or vehicle staging areas shall be identified on the Improvement Plans and located as far as practical from existing dwellings and protected resources in the area);

Mitigation Measure G-D applies to Impact Nos. G-4 and HZ-1.

Mitigation Measure G-E: Prepare and submit with the project Improvement Plans, a drainage report in conformance with the requirements of Section 5 of the LDM and the Placer County Storm Water Management Manual that are in effect at the time of submittal, to the DPW for review and approval. The report shall be prepared by a Registered Civil Engineer and shall, at a minimum, include: A written text addressing existing conditions, the effects of the improvements, all appropriate calculations, a watershed map, increases in downstream flows, proposed onsite and offsite improvements, and drainage easements to accommodate flows from this project. The report shall demonstrate that post-project flows are less than pre-project flows. The report shall address storm drainage during construction and thereafter and shall propose “Best Management Practice” (BMP) measures to reduce erosion, water quality degradation, etc. Said BMP measures for this project shall include: Minimizing drainage concentration from impervious surfaces, construction management techniques, erosion protection at culvert outfall locations, erosion control mats, revegetation, silt fence, runoff control berms or diversion ditches, sedimentation basins, hay bales, mulching, oil/grit separators, oil and debris skimmers on storm drains, and regular sweeping of paved areas.

Mitigation Measure G-E applies to Impact Nos. G-4, H-1, H-2, H-5 and B-7.

Mitigation Measure G-F: Prepare and implement a blasting plan. The Applicant will comply with applicable County Ordinances that relate to blasting and use only state licensed contractors to conduct these operations.

Mitigation Measure G-F applies to Impact Nos. G-5 and N-2.

If blasting is planned during construction, the Applicant shall prepare and implement a Blasting Plan. The Blasting Plan shall be submitted to the Placer County Department of Public Works prior to Improvement Plan approval, for review and acceptance. If the plan is not acceptable, the Applicant shall revise and submit the plan.

As a minimum requirement, the Blasting Plan shall include the following information:

1. Proposed method of transportation, storage, handling, security, and accountability of blasting materials.
2. Procedure for monitoring the blast operations and handling misfires.
3. Location, size, depth, and spacing of blast holes, type of explosive and method of loading and detonating, amount of stemming, and a maximum number of holes to be detonated per blast.
4. Provisions for blasting holes in which groundwater is encountered.
5. Type of instrumentation to be used, manufacturer, and when last calibrated and certified.
6. List of licenses, permits, or clearances required, when applied for, and date of approval or anticipated approval by federal, state, and local agencies.
7. A format for maintaining a record of individual blasts throughout the life of the job designed to record pertinent data before, during, and after the blasting operation.
8. Names and qualifications of specialists for vibration control analysis.
9. Plan showing location of warning signs and signals to be used. Method of controlling traffic and communications (if applicable).
10. The plan shall be signed by an officer of the blasting company and by a certified blaster and include his or her certification number.
11. Procedure to ensure the Placer County General Plan Noise Element criteria for a peak linear overpressure of 122 dB are not exceeded.
12. Employ a qualified blasting consultant to ensure that the charge size, shot timing and cover material are sufficient to ensure that excessive groundborne vibrations or other significant noise impacts associated with blasting activities will not occur.